Ground Water Investigation for Lot #18 Leachfield Catamount Industrial Park Milton, Vermont

> Prepared For: Cynosure, Inc. Burlington, Vermont

Prepared By:
Aquatec, Inc.
South Burlington, Vermont

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Appendix B - Boring Logs and Well Construction Diagram

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#### 1.0 Introduction

On 10 August 1989 Aquatec was contacted by Trudell Engineers, Williston, Vermont on behalf of Mr. C. Harry Bahney of Cynosure, Inc. Burlington, Vermont, requesting the sampling of the septic tank located on Lot #18 in the Catamount Industrial Park in Milton, Vermont.

The septic tank was sampled by Aquatec on 17 August 1989. The contents of the septic tank were analyzed for volatile organic compounds and U.S. EPA Target Compound List Metals. These parameters were selected after reviewing the industrial processes on site that may have contributed waste to the septic tank. Results of these analyses indicated the presence of volatile organic compounds and a number of metals in the septic tank sample, which indicated probable industrial chemical discharge to the septic tank. These results were transmitted to Cynosure, Inc. under a 7 September 1989 cover letter, which is attached as Appendix A.

In consideration of the presence of the volatile organic compounds and metals in the septic system, a ground water sampling program was implemented to determine the impact if any, of the possible release of the chemicals to the leachfield and subsequent discharge to ground water.

This report describes the methodologies used and results of ground water sampling program implemented to assess possible ground water impacts.

### 2.0 Technical Approach

Four (4) ground water monitoring wells were installed around the existing leachfield on Lot #18. The monitoring wells were installed to evaluate ground water quality and horizontal flow direction in the overburden formation. Monitoring wells were installed so at least two (2) would be hydraulically down gradient of the leachfield. Monitoring well locations are illustrated on the Map enclosed as part of this report.

Ground water level data and samples were collected from the four monitoring wells and analyzed for the compounds detected in the septic tank contents sample collected 17 August 1989. Cyanide was also selected as a parameter at this time. These parameters were selected to determine if ground water in the vicinity of the leachfield had been impacted by the contamination identified in the septic tank.

### 3.0 Monitoring Well Installation

Four (4) ground water monitoring wells were installed around the leachfield on 12 and 13 September 1989. The monitoring wells were installed by Adams Engineering of Underhill, Vermont under the direction of Aquatec personnel.

Monitoring wells were installed using a hollow stem auger soil boring rig. Ground water monitoring wells were constructed of 2-inch diameter PVC with 10 foot sections of machine-slotted (0.10 inch slots) screens. The screens were placed so the middle portion of the screen intercepted the water table. The boring annulus around the screen was packed with sand and sealed with bentonite clay. Each monitoring well was developed with an air-lift pump immediately after installation.

The monitoring wells were surveyed for elevation and horizontal location to an assumed bench mark located on the concrete pad around the chemical waste storage tank, illustrated on the site Map. Monitoring well logs and construction diagrams are attached as Appendix B. A flush mounted curb box and locking cap were installed on each of the monitoring wells.

#### 4.0 Ground Water Sampling and Analysis

Ground water samples were collected 25 September 1989 by Aquatec personnel. The ground water samples were collected using a separate Teflon bailer for each well. Bailers were cleaned at Aquatec's laboratory according the laboratory protocol. The wells were purged three volumes prior to sampling. At the time of sampling, water temperature and specific conductance were measured in the well.

Ground water samples for volatile organic compound analyses were collected in 40 milliliter (ml) vials preserved with hydrochloric acid. Ground water samples collected for metal analyses were field filtered through a 0.45 micron filter and placed in a 500 ml Nalagene bottle preserved to a pH less than 2 with nitric acid. Ground water samples collected for cyanide analysis were collected in one liter Nalagene bottles preserved with sodium hydroxide.

All samples were transported to Aquatec's laboratory in a cooler with ice under chain-of-custody procedures. A trip blank and sample replicate were collected as part of the sampling program.

Ground water samples were analyzed for parameters listed on each of the analytical reports attached as Appendix C. Analyses were performed in accordance to procedures documented and set forth in Standard Methods for the Examination of Water and Wastewater, the U.S. Environmental Protection Agency's Methods for the Chemical Analysis of Water and Waste EPA-600/4-70-010 and by interim methodologies established by the Environmental Protection Agency and published in the Federal Register.

#### 5.0 Results

#### 5.1 Geologic Materials and Ground Water Levels

During the installation of the monitoring wells, fine to coarse sands were encountered through the depth of each boring, as documented in the attached boring logs. Ground water levels indicated that ground water is flowing west towards monitoring well MW-4 under the leachfield.

#### 5.2 Chemical Analysis

Analysis of the ground water did not detect volatile organic compounds or any of the metals above drinking water standards detected in the septic tank contents except for sodium. Sodium was detected at a concentration of 630 mg/l in monitoring well MW-4 which is above the drinking water standard of 200 milligram/liter. The results of field analyses are listed in Table 1. Laboratory analysis are attached as Appendix C.

#### 6.0 Conclusions

At this time, analysis of ground water quality in the vicinity of the leachfield on Lot #18 did not detect the presence of hazardous materials as detected in the septic tank. However, sodium was detected in monitoring well MW-4 above the U.S. EPA drinking water standard.

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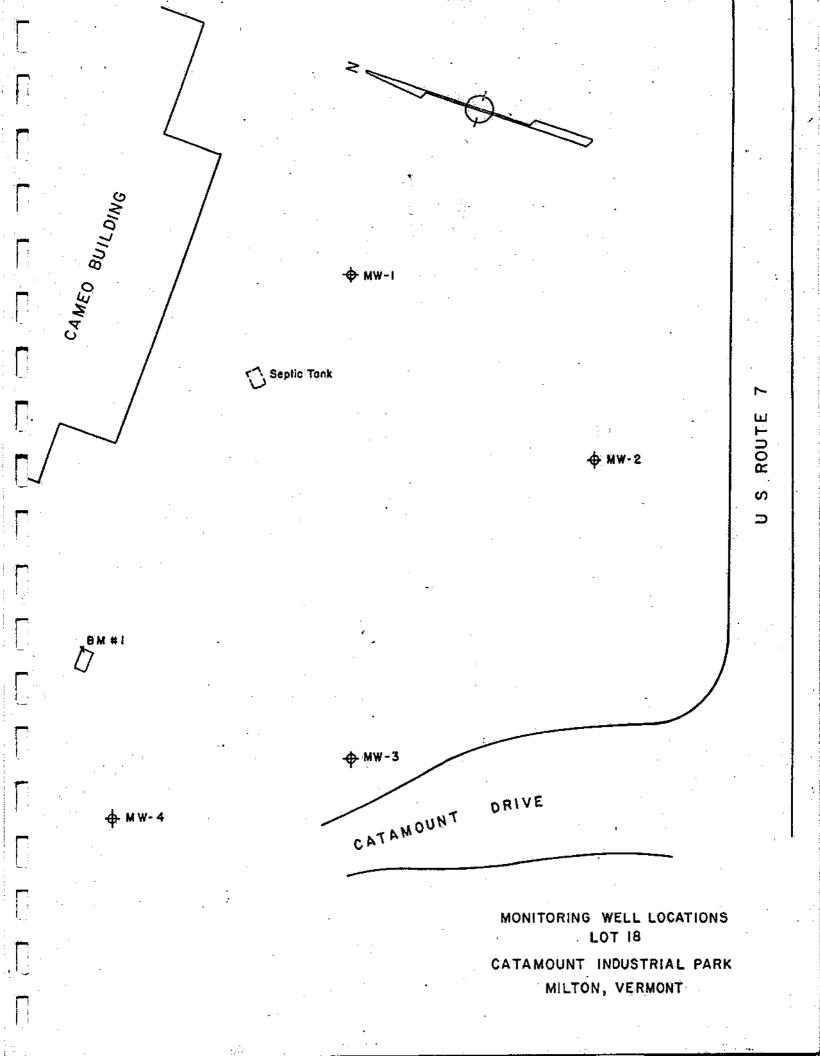
Table 1

Ground Water Sampling Field Data

Well I.D.	Elev.1	DTW <sup>2</sup> 9/25/89	Ground Water Elevation	Spec. Conductance (umhos/cm)	Temperature (°F)
MW-1	102.63	21.68	80.95	0.426	10.2
MW-2	104,95	23.97	80.98	0.276	10.0
MW-3	97.12	18.65	78.47	1.702	10.8
MW-4	91.48	14.36	77.12	3.78	13.0

 $<sup>^{</sup>m 1}$  - Surveyed to assumed bench of 100'.

 $<sup>^{2}</sup>$  - Depth to water (DTW).



Appendix A

75 GREEN MOUNTAIN DRIVE, SOUTH BURLINGTON, VERMONT 05403, TELEPHONE (802) 658-1074

September 7, 1989

Mr. C. Harry Behney Greater Burlington Industrial Corporation P.O. Box 786 Burlington, VT 05402

Re: Aquatec Project No. 89110

Dear Mr. Behney:

Enclosed are the analytical results of a wastewater sample Aquatec collected, per your request, from Cameo Craft's septic tank in the Catamount Industrial Park on August 18, 1989. The sample was analyzed for the presence of volatile organic compounds (VOCs) using EPA Method 8240 and EPA Target Compound List Metals.

The analysis of the sample for VOCs detected the presence of isopropyl alcohol at 200,000 micrograms/liter (ug/l), acetone at 33,000 ug/l, and total xylenes at 130 ug/l. Results of the Target Compound List Metals indicate that the levels of some metals identified in the septic tank wastewater are above the Federal and State recommended drinking water standards. These metals are listed in attached Table A along with the corresponding drinking water standard for comparison.

According to Mr. Ken Rota of the Agency of Natural Resources (ANR), the presence of the VOCs in a septic system constitutes a release of hazardous materials to the environment. Determination of whether the levels of metals identified in the septic tank wastewater also constitute hazardous waste should be determined by discussions with the ANR. The ANR typically evaluates hazardous waste characteristics of metal containing materials based on Extraction Procedure Toxicity Analysis, which may be required in this instance. In further conversation, Mr. Rota stated that the responsibilities of such a release are covered under Chapter 159, Title 10, Sections 6615-6617 of Vermont State Statutes. I have enclosed copies of the statutes for your review. To further clarify the situation you may want to consult your attorney.

Aquatec recommends removing the waste in the septic tank as soon as possible. It is our present understanding that all the material in the septic tank is classified as hazardous waste by the ANR and should be treated accordingly.

Mr. C. Harry Behney September 7, 1989 Page 2

If you have any questions or concerns, please call me.

Sincerely,

Brett W. Cox Hydrogeologist

BWC/lam

Enclosure

89110B6SEP89

Table A. Metals detected above Federal and State drinking water standards in the septic tank wastewater. Results reported in milligrams per liter (mg/l).

<u>Metal</u>	Aquatec <u>Results</u>	Drinking Water <u>Standard</u>
Aluminum	33	0.2
Chromium	0.56	0.05
Copper	5.9	1.0
Iron	50	0.3
Lead	0.32	0.05
Sodium	1260	200
Silver	0.27	0.05
Zinc	12.8	5



# ANALYTICAL REPORT

1 September 1989 Date: Aquatec Lab No.: 102057

ETR No.: 18152, Project 89110 Sample Received On: 17 August 1989

Sample Identification: Greater Burlington Industrial Corp., sample

from septic tank collected 8/17/89 at 1200

hours.

### Volatile Organic Compounds in ug/l EPA Method 8240

benzene	150	U
carbon tetrachloride	150	U
chlorobenzene	150	U
1,2-dichloroethane	150	U
1,1,1-trichloroethane	150	Ü
1.1-dichloroethane	150	U
1,1,2-trichloroethane	150	U
1,1,2,2-tetrachloroethane	150	Ū
chloroethane	300	U
2-chloroethyl vinyl ether	300	U
chloroform	150	Ü
1,1-dichloroethene	150	Ü
1,2-dichloroethene	150	Ü
1,2-dichloropropane	150	Ū
trans-1,3-dichloropropene	150	U
cis-1,3-dichloropropene	150	
ethylbenzene	150	_
isopropyl alcohol 20000		<del></del>
IDODIOR, I CICAROL CONTRACTOR		7

•	
methylene chloride	LCB
chloromethane	<u>300 U</u>
bromomethane	300 U
bromoform	<u> 150 บ</u>
bromodichloromethane	150 U
dibromochloromethane	150 U
tetrachloroethene	150 บ
toluene	150 U
trichloroethene	150 บ
vinyl chloride	300 U
acetone	33000
2-butanone	300 U
carbon disulfide	150 U
2-hexanone	300 U
4-methyl-2-pentanone	300 U
styrene	150 U
vinyl acetate	300 U
total xylenes	130J

Sample was diluted 30 fold and 200 fold for analysis.

Key to the letters used to qualify the results of the analysis:

- U The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C The result has been corrected for the presence of the compound in the blank.



## ANALYTICAL REPORT

Greater Burlington Industrial

Corporation P.O. Box 786

Burlington

VT

05402

Attention Phone no.

: C. HARRY BEHNEY : 802-862-5726

Date Printed: 09/01/89

ETR Number 18152 Project No. 89110

No. Samples

Arrived 08/17/89

P.O. Number

1 Page

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.

All results are in mg/l unless otherwise noted.

Lab No. Sample Description

102057 SEPTIC TANK: 08/17/89 @1200

Method No.	Parameter	Result	
			_
	VOLATILE ORGANICS		C
	ALUMINUM, TOTAL	33	
7041	ANTIMONY, TOTAL	<0.89	
7060	ANTIMONY, TOTAL ARSENIC, TOTAL	<0.14	
6010	BARIUM, TOTAL	0.58	
6010	BERYLLIUM, TOTAL	<0.15	
6010	CADMIUM, TOTAL	<0.15	
6010	CALCIUM, TOTAL	68	
6010	CHROMIUM, TOTAL	0.56	
6010	COBALT, TOTAL	- <0.75	
6010	COPPER, TOTAL	5.9	
6010	IRON, TOTAL	50	
7421	LEAD, TOTAL	0.32	
6010	MAGNESIUM, TOTAL	21	
6010	MANGANESE, TOTAL	1.21	
7471	MERCURY, TOTAL	<0.03	
6010	NICKEL, TOTAL	<0.60	
6010	POTASSIUM, TOTAL	20	

Comments/Notes

C = Procedure/analysis completed

Note: All results are reported on a mg/Kg as received basis.

Submitted By

Mason Marke Aquatec Inc.



### ANALYTICAL REPORT

Greater Burlington Industrial

Corporation P.O. Box 786

Burlington

VT

05402

: C. HARRY BEHNEY

**Attention** : 802-862-5726 Phone no.

Date Printed: 09/01/89

18152 ETR Number Project No. 89110

No. Samples Arrived 08/17/89

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Page

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.

All results are in mg/L unless otherwise noted.

Lab No. Sample Description 102057 SEPTIC TANK: 08/17/89 @1200

Method No.	Parameter	Result
7740	SELENIUM, TOTAL	<0.07
6010	SODIUM, TOTAL	1260
7841	THALLIUM, TOTAL	<0.14
6010	VANADIUM, TOTAL	<0.75
6010	ZINC, TOTAL	12.8
3050	DIGESTION, FL/ICP O	C
3050	DIGESTION, FU O,FL/ICP Ag	· C.
272.1	SILVER, TOTAL	0.27

Submitted By :

, Aquatec Inc. Mon Musse

Appendix B

Aquatec, Inc.
75 Green Mountain Drive

South Burlington, VT 05403

Project: Cameo Leachfield

Project No: 89110

Location: Milton Vermont

Elev.	r.o.w:	··········	Elev. B.O	.W:	Y	Yell Dia: 2" Boring Dia: 61	
					_	O slot PVC Casing Matl: Sch 40 PVC	
Packi	ng Matl:	Ottawa Sa	and S	Seal Matl:	Benton	ite Backfill Matl: Natural	
						Method: HSA Logged By: BWC	
Depth		Sau	ple		Well	Soil and Rock Descriptions/Comments	
(Feet)	Type and No	Depth Range (Feet)	Recovery Of RQD	Blows	Const.	(Unified soil class system, Rock description, Depth to water, Loss of drill water, discoloration, PID, etc.)	
, .						: 	
					•		
		3.9		2-2		Light brown medium SAND	
5-	SS-1	5.9	100%	3-3			
ļ. '			, 1	<del></del>			
	1					•	
<b>.</b> .	<b></b>	8.5		2-2			
10	SS-2	1	100%		] .	as above	
	1 00 2	10.5	100%	2-2		_	
[	]	·					
	]					•	
	<u> </u>	13.8		2-1		as above with Fe staining near bottom	
15	SS-3		100%	· .		as above with re staining hear bottom	
	<u></u>	15.8	<u></u>	2-6		-	
	-		]			·	
1	4				-   - <u> </u> -		
		18.8	· ·	1-2	<u> </u> • ≡ •	Light brown medium SAND over brown	
20	- ss-4	, , ,	100%	2-5	$[\cdot] \equiv [\cdot]$	fine SAND -	
ŀ		20.8		<u>-</u> -	:  <u>=</u>  :		
	1				· ≡ ·.	•	
	1		<u> </u>		1.1=1		
	1 00 5	24.1	1007	15	1.1=1:	Brown medium SAND	
25	<b>S</b> S−5	26.1	100%	.5-1			
San	nple Type		Auger		ilit Spoon	RC-Rock Core C-Chips	
Summary: Overburden Depth: Bedrock Depth: Total Depth: Total Depth:							

Aquatec, Inc.
75 Green Mountain Drive
South Burlington, VT 05403

Project: Cameo Leachfield

Project No: 89110

Location: Milton, Vermont

Elev. 7	r.o.w:	·	Elev. B.C	).W:	Y	Well Dia:	Boring Dia:		
Screen	ı Inter: _	<u> </u>		Screen Ma	ıtl:	: Casing Matl:			
						,	Backfill Matl:		
Contra	actor:		Drill	ler:	<del></del>	Method:	Logged By:		
Denth	T	San	mple		Well -	Soil and Ro	ck Descriptions/Comments		
(Feet)	Type and No	Depth Range (Feet)	Recovery Or RQD	Blows	Const.	(Unified soil class s	system,Rock description,Depth to water, I water, discoloration, PID, etc.)		
30 -	SS-6	29.3 30.3	100%	1-2		Brown medium	SAND brown fine SAND		
-						Sand: 16.0	18.3' - 27.8' 0' - 29.0' 15.5' - 16.0'		
	]	j .							
- - -									
							: :		
Sam	ple Type:	A	Auger	SS-Sr	olit Spoon	RC-Rock	Core C-Chips		

Aquatec, Inc.

Cameo Leachfield Project:

Boring No: \_\_\_\_MW-2\_

75 Green Mountain Drive South Burlington, VT 05403

89110 Project No: \_

Sheet 1 of 2

Milton, Vermont Location:

Dates: 9/12/89

Screen Inter:   19.9 - 29.4   Screen Matt:   No. 10 slot PVC   Casing Matt:   Sch 40 PVC	Elev.	г.о.w:	· · · · · ·	Elev. B.C	).Wt	- 1	Weil Dia:	2" В	oring Dia: 61
Contractor: Adams Eng. Driller: G. Adams Method: HSA Logged By: BWC  Depth Sample Feet) Type and No Pepth Range (Feet) RQD. Blows (Const. Type and No Pepth Range (Feet) RQD. Blows RQD. Blows (Sample Const. RQD. Blows RQD. Blows RQD. Blows RQD. Blows RQD. Blows RQD. Light brown medium/coarse SAND  10 SS-2 9.2 100% 2-1  10 SS-2 9.2 100% 1-2  11.2 1-1  13.3 100% 1-1  Light brown fine SAND  Light brown fine SAND  Light brown medium SAND with brown lenses	Screen	ı Inter: _	19.9 - 29	.4 .	Screen Ma	tl: No.	10 slot PVC	Casing Matl:	Sch 40 PVC
Sample Feet) Freet) Type and No Depth Range Recovery (Feet)  Soll and Rock Descriptions/Comments (Unified soil class system,Rock description,Depth to water, Loss of drill water, discoloration, FID, etc.)  SS-1 4.2 100% 2-1  Light brown medium/coarse SAND  SS-2 9.2 100% 1-2  11.2 1-1  Light brown fine SAND  Light brown fine SAND	Packi	ng Mati: _	Ottawa Sa	nd i	Seal Mati:	Bent	<u>onite</u>	Backfill Mat	: <u>Natural</u>
Sample Feet) Type and No Depth Range Recovery RQD Blows  SS-1 Recovery RQD Blows Const.  Soli and Rock Descriptions/Comments (Unified soil class system, Rock description, Depth to water, Loss of drill water, discoloration, PID, etc.)  SS-1 100% 2-1  Light brown medium/coarse SAND  10 SS-2 9.2 100% 1-2  11.2 1-2 as above  Light brown fine SAND  Light brown fine SAND	Contra			Drill	er: <u>G</u> .	Adams	Method:	HSA ]	Logged By: BWC
5 - SS-1	Depth		San		,	Well	Soil and	Rock Descripti	ons/Comments
10 - SS-2   9.2   100%   1-2	(Feet)	Type and No.	Depth Range (Feet)	Recovery RQD	Blows	Const.	(Unified soil cla Loss of	ss system,Rock desc drill water, discolore	ription,Depth to water, ation, PID, etc.)
10 - SS-2   9.2   100%   1-2	, .							,	•
10 - SS-2   9.2   100%   1-2	-		<b>:</b> .		 				
10 - SS-2   9.2   100%   1-2	_			-				•	· ·
10 SS-2 9.2 100% 1-2 as above  13.3 1-2 Light brown fine SAND  15 SS-3 15.3 100% 1-1  20 SS-4 19.0 100% 3-4 Light brown medium SAND with brown lenses	5 <b>-</b>	SS-1	4.2	100%	2-1		Light brown	medium/coar	se SAND
10 - SS-2 9.2 100% 1-2 as above  11.2 1-1  13.3 1-2 Light brown fine SAND  20 - SS-4 19.0 100% 3-4 Light brown medium SAND with brown lenses			6.2	100%	2-1				
10 - SS-2   100%   1-1   Light brown fine SAND   15 - SS-3   15.3   100%   1-1   Light brown medium SAND with brown lenses	· -								
10 - SS-2   100%   1-1   Light brown fine SAND   15 - SS-3   15.3   100%   1-1   Light brown medium SAND with brown lenses	_				·				. ,
10 - SS-2   100%   1-1   Light brown fine SAND   15 - SS-3   15.3   100%   1-1   Light brown medium SAND with brown lenses							·		
13.3 1-2 Light brown fine SAND  15 SS-3 15.3 100% 1-1 Light brown medium SAND with brown lenses	10 -	\$S-2	9.2	100%	1-2		as above	•	· · -
15 - SS-3 15.3 100% 1-1 Light brown fine SAND  20 - SS-4 19.0 3-4 Light brown medium SAND with brown lenses	-	ļ	11.2		1-1				
15 - SS-3 15.3 100% 1-1 Light brown fine SAND  20 - SS-4 19.0 3-4 Light brown medium SAND with brown lenses	-								
15 - SS-3 15.3 100% 1-1 Light brown fine SAND  20 - SS-4 19.0 3-4 Light brown medium SAND with brown lenses			<u> </u>						•
20 - SS-4 19.0 100% 3-4 Light brown medium SAND with brown lenses			:	100%			Light brown	fine SAND	•
20 - SS-4   100%   - lenses -	15 -	SS-3	15.3		1-1			·	-
20 - SS-4   100%   - lenses -				· ·					•
20 - SS-4   100%   - lenses -		1			ļ				•
20 - SS-4   100%   - lenses -	•								•
1   I   Temper	20 -	29_/	19.0	1007	3-4	1.		medium SAND	with brown
		70 4	21.0	100%	6-8		tenses		
		·			-	$ \cdot  \equiv  \cdot $			
	_	]			ļ	.  <u>=</u>  ,		·	٠.
24.0 2-1 Brown medium SAND with Fe <sup>+</sup> staining			24.0	<del> </del>	2_1	==   :	Brown modifie	m CAND was all	Fo <sup>+</sup> staining
25 - SS-5   100%     -	25 -	SS-5		100%			Prown wearn	m own with	Le statutus
Sample Type: A-Auger SS-Split Spoon RC-Rock Core C-Chips	Sam	l ple Type		Auger	كالمستحدد والمراجع و	lit Snoon	RC-Ray	ck Core	C-Chins
Summary: Overburden Depth: Bedrock Depth: Total Depth: 31.3		<del></del>			<del></del>				

Aquatec, Inc.
75 Green Mountain Drive

South Burlington, VT 05403

Project: Cameo Leachfield

Project No: 89110

Location: Milton, Vermont

Eler.	T.O.W:	<del></del>	Elev. B.C	).W:	<u> </u>	Well Dia:	Boring Dia:
Scree	a Inter: _	· .	1	Screen Ma	atl:	<del></del>	Casing Matl:
Packi	ng Matl:			Seal Matl	:	<del></del>	Backfill Matl:
Contr	actor:		Drill			Method: _	Logged By:
Depth		San	mple		Well	Soil and	d Rock Descriptions/Comments
(Feet)	Type and No	Depth Range (Feet)	Recovery RQD	Blows	Const.	(Unified soil of	class system,Rock description,Depth to water, of drill water, discoloration, PID, etc.)
30 -		30.3	100%	Topo			ty fine SAND
	SS-6	31.3	100%	Taps	<u>.</u>		-,
•						Screened:	19.9' - 29.4'
							.4' - 30.5' : 15.0' - 17.4'
	1	1	1				
Sam	ple Type:	A-	Auger	SS-S <sub>I</sub>	plit Spoon	RC-R	tock Core C-Chips
Summary: Overburden Depth: Bedrock Depth: Total Depth:							

Aquatec, Inc.
75 Green Mountain Drive
South Burlington, VT 05403

Project: Cameo Leachfield

89110

•:

Location:

Project No: \_\_\_\_

Milton, Vermont

Elev.	T.O.W:		Elev. B.C	).W:		Well Dia: 2" Boring Dia: 6½
Scree	n Inter: 1	4.2 - 23.	7 ;	Screen Ma	ati: <u>No. 1</u>	O slot PVC Casing Matl: Sch 40 PVC
Packi	ng Mati: _	Ottawa S	Sand :	Seal Mati	: Bent	onite Backfill Matl: <u>Natural</u>
Contr	actor: <u>A</u>	dams Eng.	Drill	ler: <u>G. /</u>	Adams	Method: HSA Logged By: BWC
Depth		Sat	-		Well	Soil and Rock Descriptions/Comments
(Feet)	Type and No.	Depth Range (Feet)	Recovery OF RQD	Blows	Const.	(Unified soil class system, Rock description, Depth to water, Loss of drill water, discoloration, PID, etc.)
, ,						
				<u> </u>		
					.	
		4.0	-	2-3		Light brown medium to coarse SAND
5 -	SS-1	6.0	100%			Digite blown medicin to coarse SAND
. •		0.0	,	2-3	1	
<b>'</b>	1					
						į.
10	SS-2	9.2	1000	3-2		
10,	33-2	11.2	100%	3-3		as above
				·		
	<u> </u>	·	-	·  -		·
ļ .	i	14.3			.	
15 -	ss-3	14.5	100%	2-3	[·  <u>=</u>  ·	Medium light brown SAND over light brown Medium/Coarse SAND
		16.3		4-6		brown Medium/ Coarse SAND
					<u>                                   </u>	
]	1	·	-			
20 -	SS-4	19.1		1-1	. = .	Medium/Coarse light brown SAND over
] 20 -	33-4	21.1	100%	1-1	<u>                                   </u>	brown fine SAND
	·	<del></del>				
			-			
				ļ.		
25 -	ec 5	25.0 26.0	100%	2 1		Brown fine SAND
Sam	SS-5 ple Type:		Auger	2-1 SS-Sn	lit Spoon	RC-Rock Core C-Chips
	mary:		irden Dep			ock Depth: Total Depth: 26.0

				FIELD	BORIN	IG LOG	
Aggat	tec, Inc.	· .	Project:	Car	meo_Leacl	h <b>fi</b> eld	Boring No: MW-3
75 Green	Mountain Dr	ive	Project No: 89110 Sheet 2 of 2				
South Bu	rlington, VT	05403		M		·	Dates:
	<del> </del>						
Eley.	T.O.W:		Elev. B.C	).W:		Well Dia:	Boring Dia:
							Casing Matl:
							Backfill Matl:
	actor:		Driller:		· ·		Logged By:
Depth		San	nple		Well	<del></del>	Rock Descriptions/Comments
(Feet)	Type and No	Depth Range (Feet)	Recovery or RQD	Blows	Const.	(Unified soil class	ss system, Rock description, Depth to water, irill water, discoloration, PID, etc.)
					-		
-	ļ					Screened: 1 Sand: 11.8	4.2' - 23.7'
-							10.8' - 11.8'
-							
_		[					
-							
j			, ]				
-				-			
	·				:		
_			·				
-			,	- •			
				·			
·						•	
7					,		
4	:						
	1	ı	. 1	. [	i.	ř	

Sample Type:

A-Auger

SS-Split Spoon

RC-Rock Core

C-Chips

Overburden Depth: Summary:

Bedrock Depth:

Total Depth:

Aquatec, Inc.

75 Green Mountain Drive South Burlington, VT 05403 Project: Cameo Leachfield

Project No: 89110

Location: Milton, Vermont

Boring No: \_\_\_\_\_MW~4

Sheet \_\_\_\_\_ of \_\_\_\_

Dates: \_\_\_\_\_ 9/13/89 \_\_\_\_

<del></del>						
Elev.	T.O.W:		Elev. B.C	).W:		Well Dia: 2" Boring Dia: 6½
Scree	ı Inter: _	9.8 <b>-</b> 19.	3 .	Screen Ma	ıtl: <u>No.</u>	0 slot PVC Casing Matl: Sch 40 PVC
Packi	ng Mati: _	Ottawa S	and :	Seal Matl:	<u>Bento</u>	onite Backfill Mati: Natural
Contr	actor: Ac	lams Eng.	Drill	ler: <u>G.</u>	Adams	Method: HSA Logged By: BWC
Depth			nple		Well -	Soil and Rock Descriptions/Comments
(Feet)	Type and No	Depth Range (Feet)	Recovery RQD	Blows	Const.	(Unified soil class system, Rock description, Depth to water, Loss of drill water, discoloration, PID, etc.)
	<b>.</b>					
	] .					
•		,				
•						•
-		4.0		2-2		Medium/Coarse light brown SAND bright
5 -	SS-1		100%			orange band in middle, silty towards
Ι.		6.0		3-3		bottom
	]			1		
					[·]	
<u>'</u>	]					
	·	8.5		2-3	[·] ].	Ticks have fine CAND
10 -	SS-2	10.5	100%	3-2		Light brown fine SAND
					1   =   :	
	_				·     ·	· .
1		·		<u> </u>		
				ļ		
•		14.0				Light brown Medium/Coarse SAND, over
15 -	SS-3		100%	2 Total	—   -	bright red, over blue gray, over bright-
] .		16.0				red, over gray fine SAND
				1 .	=   .	
	]	1			.  <del>=</del>  -	
] '	] .					
Ι ΄	1					<b> </b>
20 -	1					· · · · · · · · · · · · · · · · · · ·
.	-				<del>'</del>	
	SS-4	21.6	100%	1-2	†	Brown silty fine SAND
	ļ	22.6			<b>-</b>	Screened: 9.8' - 19.3'
				1		Sand: 6.9' - 21.0'
						Bentonite: 5.8' - 6.9'
1 -	7				, ,	. ·
Sam	ple Type:	1 A -	l Auger	SS-Sn	lit Spoon	RC-Rock Core C-Chips
	mary:		urden Dep			ock Depth: Total Depth: _22.6
1 200	mar A:	0.161.01	rineir neb		Degri	New meters Total meters

Appendix C



### ANALYTICAL REPORT

Cynosure, Inc. P.O. Box 786

Lab No.

Burlington, VT 05402

Date : 10/17/89 ETR Number: 18527 Project No.: 89110 No. Samples:

Arrived : 09/25/89

Attention : C. Harry Behney

Page 1

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.

All results are in mg/l unless otherwise noted.

103764	Trip Blank, DI	water:09/25/89 @0830	
	Method No.	Parameter	Result
	6010	Aluminum, Total	<0.05
	6010	Chromium, Total	<0.02
	6010	Copper, Total	<0.025
	6010	Iron, Total	<0.04
	6010	Sodium, Total	<0.05
	6010	Zinc, Total	<0.04
	7760	Silver, Total	<0.02
	9010	Cyanide, Total	<0.01
103765	MW-1, ground wa	ter:09/25/89 @1010	
	6010	Aluminum, Total	<0.05
	6010	Chromium, Total	<0.02
	6010	Copper, Total	<0.025
	6010	Iron, Total	0.15
	6010	Sodium, Total	33
	6010	Zinc, Total	0.04
	7760	Silver, Total	<0.02
	9010	Cyanide, Total	<0.01
103766	MW-2, ground wa	ter:09/25/89 @1030	
	6010	Aluminum, Total	<0.05
	6010	Chromium, Total	<0.02
	6010	Copper, Total	<0.025
	6010	Iron, Total	<0:04
•	6010	Sodium, Total	9.1
-	6010	Zinc, Total	<0.04
< Cont	Novt Dage	•	

Sample Description

< Cont. Next Page >



#### ANALYTICAL REPORT

Cynosure, Inc. P.O. Box 786

Lab No.

Burlington, VT 05402

Date : 10/17/89 ETR Number : 18527 Project No.: 89110

No. Samples:

Arrived : 09/25/89

Attention : C. Harry Behney

Page

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.

All results are in mg/l unless otherwise noted.

Sample Description

			•
	Method No.	Parameter	Result
	7760	Silver, Total	<0.02
•	9010	Cyanide, Total	<0.01
103767	MW-3, ground wa	ter:09/25/89 @1100	
	6010	Aluminum, Total	<0.05
	6010	Chromium, Total	<0.02
	6010	Copper, Total	<0.025
	6010	Iron, Total	0.04
	6010	Sodium, Total	133
	6010	Zinc, Total	<0.04
	7760	Silver, Total	<0.02
	9010	Cyanide, Total	<0.01
103768	MW-4, ground wa	ter:09/25/89 @1130	
	6010	Aluminum, Total	<0.05
	6010	Chromium, Total	<0.02
	6010	Copper, Total	<0.025
	6010	Iron, Total	0.06
	6010	Sodium, Total	630
	6010	Zinc, Total	<0.04
	7760	Silver, Total	<0.02
	9010	Cyanide, Total	<0.01
103769	Replicate, grou	nd water: 09/25/89 @1130	
	6010	Aluminum, Total	<0.05
	6010	Chromium, Total	<0.02



#### ANALYTICAL REPORT

Cynosure, Inc. P.O. Box 786

Burlington, VT 05402

Date : 10/17/89 ETR Number: 18527

Project No.: 89110

No. Samples: Arrived : 09/25/89

Attention : C. Harry Behney

Page 3

Standard analyses were performed in accordance with Methods for Analysis of Water and Wastes, EPA-600/4/79-020, Test Methods for Evaluating Solid Waste, SW-846, or Standard Methods for the Examination of Water and Wastewater.

All results are in mg/l unless otherwise noted.

Lab No.	Sample	Description	
103769	Replicate, gro	und water: 09/25/89 @1130	•
	Method No.	Parameter	Result
	6010	Copper, Total	<0.025
	6010	Iron, Total	0.06
	6010	Sodium, Total	630
	6010	Zinc, Total	<0.04
	7760	Silver, Total	<0.02
	9010	Cyanide, Total	<0.01
103770	Septic Tank, wa	astewater: 09/25/89 @1220	•
	9010	Cvanide, Total	<0.01

< Last Page >

Submitted By :

Musin Musilee Inc.



### ANALYTICAL REPORT

Date: 17 October 1989 Aquatec Lab No.: 103764

ETR No.: 18527, Project No. 89110 Sample Received On: 25 September 1989

Sample Identification: Cynosure, Inc., DI water sample labeled Trip Blank,

collected 9/25/89 at 0830 hours.

#### Volatile Organic Compounds in ug/l EPA Method 8240

•		
benzene	5	U
carbon tetrachloride	5	U
chlorobenzene	5	U
1,2-dichloroethane	5	U
1,1,1-trichloroethane	5	U
1,1-dichloroethane	5	U
1,1,2-trichloroethane	. 5	ับ
1,1,2,2-tetrachloroethane		U
chloroethane	10	U
2-chloroethyl vinyl ether	10	Ū
chloroform	5	U
1,1-dichloroethene	5	Ų
1,2-dichloroethenes	5	U
1,2-dichloropropane	5	U
trans-1,3-dichloropropene	5	U
cis-1,3-dichloropropene	5	Ų
ethylbenzene	. 5	U
· · · · · · · · · · · · · · · · · · ·		

methylene chloride	LCB		
chloromethane		10	U
bromomethane		10	U
bromoform		. 5	U
bromodichloromethane		5	U
dibromochloromethane		5	U
tetrachloroethene		5	U
toluene		5	U
trichloroethene		5	U
vinyl chloride		10	U
acetone		10	U
2-butanone		10	Ü
carbon disulfide		5	Ŭ
2-hexanone		10	U
4-methyl-2-pentanone		10	Ü
styrene		5	U
vinyl acetate		10	U
total xylenes		5	U

### Key to the letters used to qualify the results of the analysis:

- U The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C The result has been corrected for the presence of the compound in the blank.



### ANALYTICAL REPORT

Date: 17 October 1989 Aquatec Lab No.: 103765

ETR No.: 18527, Project No. 89110 Sample Received On: 25 September 1989

Sample Identification: Cynosure, Inc., ground water sample labeled MW-1,

collected 9/25/89 at 1010 hours.

### Volatile Organic Compounds in ug/1 EPA Method 8240

·		
benzene	5	U
carbon tetrachloride	5	Ū
chlorobenzene	5	U
1,2-dichloroethane	5	U
1,1,1-trichloroethane		Ü
1,1-dichloroethane		U
1,1,2-trichloroethane	5	Ų
1,1,2,2-tetrachloroethane	5	Ų
chloroethane	10	U
2-chloroethyl vinyl ether	10	U
chloroform	5	U
1.1-dichloroethene	5	Ų
1,2-dichloroethenes	. 5	Ų
1,2-dichloropropane		U
trans-1,3-dichloropropene		U
cis-1,3-dichloropropene	5	u
ethylbenzene	5	U
,		

methylene chloride	LCB		
chloromethane		10	Ų
bromomethane		10	υ
bromoform		5	U
bromodichloromethane		_ 5	Ú
dibromochloromethane		5	U
tetrachloroethene		5	U
toluene		5	U
trichloroethene		5	U
vinyl chloride		10	U
acetone		10	U
2-butanone		10	U
carbon disulfide		- 5	U
2-hexanone		10	Ū
4-methyl-2-pentanone		10	U
styrene		5	U
vinyl acetate		10	U
total xylenes		5	U

Key to the letters used to qualify the results of the analysis:

- U The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C The result has been corrected for the presence of the compound in the blank.



### ANALYTICAL REPORT

Date: 17 October 1989 Aquatec Lab No.: 103766

ETR No.: 18527, Project No. 89110 Sample Received On: 25 September 1989

Sample Identification: Cynosure, Inc., ground water sample labeled MW-2,

collected 9/25/89 at 1030 hours.

### Volatile Organic Compounds in ug/1 EPA Method 8240

benzene	. 5	Ų
carbon tetrachloride	5.	Ų
chlorobenzene	5	U
1,2-dichloroethane	5	Ų
1,1,1-trichloroethane	5	U
1.1-dichloroethane	. 5	U
1,1,2-trichloroethane	5	Ü
1,1,2,2-tetrachloroethane	5	U
chloroethane	10	Ù
2-chloroethyl vinyl ether	10	Ų
chloroform	. 5	Ū
1,1-dichloroethene	5	Ü
1,2-dichloroethenes	5	U
1,2-dichloropropane	5	Ü
trans-1,3-dichloropropene	5	U
cis-1,3-dichloropropene	5	U
ethylbenzene	5	U

methylene chloride	LCB		
chloromethane		10	U
bromomethane		10	U
bromoform		5	ΰ
bromodichloromethane		5	υ
dibromochloromethane		5	Ų
tetrachloroethene		5	IJ
toluene		5	Ų
trichloroethene		_ 5	U
vinyl chloride		10	·U
acetone		10	U
2-butanone		10	υ
carbon disulfide		5.	U
2-hexanone		10	υ
4-methy1-2-pentanone		10	U
styrene		5	U
vinyl acetate	•	10	U
total xylenes		5	I

Key to the letters used to qualify the results of the analysis:

- U The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C The result has been corrected for the presence of the compound in the blank.



## ANALYTICAL REPORT

Date: 17 October 1989 Aquatec Lab No.: 103767

ETR No.: 18527, Project No. 89110 Sample Received On: 25 September 1989

Sample Identification: Cynosure, Inc., ground water sample labeled MW-3,

collected 9/25/89 at 1100 hours.

### Volatile Organic Compounds in ug/l EPA Method 8240

<b>*</b>	_	
benzene	5	Ų
carbon tetrachloride	. 5	ij
chlorobenzene	5	Ü
1,2-dichloroethane	5	Ü
1.1.1-trichloroethane	5	U
1.1-dichloroethane	5	U
1,1,2-trichloroethane	5	U
1.1.2.2-tetrachloroethane	5	U
chloroethane	. 10	U
2-chloroethyl vinyl ether	10	U
<u>chloroform</u>	5	Ū
1,1-dichloroethene	5	U
1,2-dichloroethenes	. 5	U
1.2-dichloropropane	5	U
trans-1.3-dichloropropene	. 5	U
cis-1,3-dichloropropene	5	U
ethylbenzene	5	U

methylene_chloride	LCB	
chloromethane	10	U
bromomethane	10	U
bromoform	5	υ
bromodichloromethane	5	U
dibromochloromethane	. 5	υ
tetrachloroethene	5	U
toluene_	5	U
trichloroethene	5	υ
vinyl chloride	10	Ų
acetone	10	U
2-butanone	10	U
carbon disulfide	. 5	U
2-hexanone	10	U
4-methyl-2-pentanone	10	Ü
styrene	5	U
vinyl acetate	10	U
total xylenes	5	U

### Key to the letters used to qualify the results of the analysis:

- U The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C The result has been corrected for the presence of the compound in the blank.



### ANALYTICAL REPORT

Date: 17 October 1989 Aquatec Lab No.: 103768

ETR No.: 18527, Project No. 89110 Sample Received On: 25 September 1989

Sample Identification: Cynosure, Inc., ground water sample labeled MW-4,

collected 9/25/89 at 1130 hours.

#### Volatile Organic Compounds in ug/l EPA Method 8240

benzene	5	Ü
carbon tetrachloride	5	U
chlorobenzene	5	Ų
1,2-dichloroethane	5	ť
1,1,1-trichloroethane	5	U
1,1-dichloroethane	5	U
1,1,2-trichloroethane	5	U
1,1,2,2-tetrachloroethane	5	Ü
chloroethane	10	Ú
2-chloroethyl vinyl ether	10	Ü
chloroform	5	Ų
1.1-dichloroethene	5.	U
1,2-dichloroethenes	5	Ù
1,2-dichloropropane	5	υ
trans-1,3-dichloropropene	5	Ú
cis-1,3-dichloropropene	5	Ü
ethylbenzene	. 5	U

methylene chloride	LCB
chloromethane	10 U
bromomethane	10 U
bromoform	5 บ
bromodichloromethane	<u>5 U</u>
dibromochloromethane	5 U
tetrachloroethene	5 U
toluene	5 U
trichloroethene	5 <u>U</u>
vinyl chloride	10 U
acetone	<u> 10 U</u>
2-butanone	<u> 10 U</u>
carbon disulfide	์ 5 บ
2-hexanone	10 U
4-methyl-2-pentanone	10 U
styrene	5 U
vinyl acetate	. 10 U
total xylenes	5 U

Key to the letters used to qualify the results of the analysis:

- U The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C The result has been corrected for the presence of the compound in the blank.



### ANALYTICAL REPORT

Date: 17 October 1989 Aquatec Lab No.: 103769

ETR No.: 18527, Project No. 89110 Sample Received On: 25 September 1989

Sample Identification: Cynosure, Inc., ground water sample labeled

Replicate, collected 9/25/89 at 1130 hours.

#### Volatile Organic Compounds in ug/l EPA Method 8240

benzene	5	U
carbon tetrachloride	. 5	U
chlorobenzene	Š	U
1,2-dichloroethane	5	Ų
1,1,1-trichloroethane	5	U
1,1-dichloroethane	5	Ų
1,1,2-trichloroethane	5	U
1,1,2,2-tetrachloroethane	5	Ú
chloroethane	10	Ų
2-chloroethyl vinyl ether	10	Ù
chloroform	5.	Ų
1,1-dichloroethene	5	Ú
1,2-dichloroethenes	5	Ù
1,2-dichloropropane	5	Ü
trans-1,3-dichloropropene	5	Ú
cis-1,3-dichloropropene	5	U
ethylbenzene	5	U
, , , , , , , , , , , , , , , , , , , ,		<del></del>

methylene chloride	5 U
chloromethane	10 U
bromomethane	10 U
bromoform	5 U
bromodichloromethane	5 U
dibromochloromethane	. 5 U
tetrachloroethene	5 U
toluene	5 U
trichloroethene	5 U
vinyl chloride	10 U
acetone	10 Ú
2-butanone	10 Ù
carbon disulfide	5 U
2-hexanone	10 U
4-methyl-2-pentanone	10 บ
styrene	. 5 U
vinyl acetate	10 บ
total xylenes	5 U

Key to the letters used to qualify the results of the analysis:

- U The compound was analyzed for but not detected. The number is the detection limit for the compound.
- LCB Compound was found but at low concentration, comparable to that in the blank. Quantitation is not possible.
- J An estimated value. The mass spectrum indicates the presence of the compound, but the calculated result is less than the reliable detection limit for this compound.
- C The result has been corrected for the presence of the compound in the blank.